

CAPACITIVE SEMICONDUCTOR PRESSURE SENSOR

Abstract

A capacitive semiconductor pressure sensor includes a non-single-crystal-silicon-based substrate, a conductive movable polysilicon diaphragm, a polysilicon supporter positioned on the non-single-crystal-silicon-based substrate for fixing two ends of the polysilicon diaphragm and forming a sealed cavity between the polysilicon diaphragm and the non-single-crystal-silicon-based substrate, a stationary electrode positioned on the non-single-crystal-silicon-based substrate and below the polysilicon diaphragm, and a thin film transistor (TFT) control circuit positioned on the non-single-crystal-silicon-based substrate and electrically connected to the plate capacitor. The stationary electrode and the polysilicon diaphragm together constitute a plate capacitor, and the stationary electrode and the polysilicon diaphragm respectively function as a lower electrode and an upper electrode of the plate capacitor.